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[54] HIGHLY SENSITIVE ASSAY METHOD FOR L-CARNITINE AND COMPOSITION FOR PRACTICING SAME

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[58] **Field of Search** 435/26, 89, 90, 117, 435/128, 829; 436/815

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[57] **ABSTRACT**

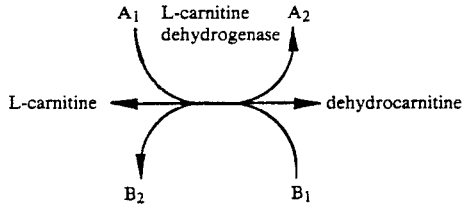
A method of assaying L-carnitine in a specimen comprises reacting a specimen containing L-carnitine with:

a) L-carnitine dehydrogenase having coenzymes of the thio-NAD group and of the NAD group, and which catalyzes a reversible reaction forming dehydrocarnitine from a substrate of carnitine,

b) A_1 and

c) B_1

to effect a cycling reaction of the formula



wherein A_1 is thio-NAD group or NAD group, A_2 is a reduced form of A_1, when A_1 is thio-NAD group, B_1 is reduced NAD group and when A_1 is NAD group, B_1 is reduced thio-NAD, and wherein B_2 is an oxidized form of B_1; and measuring an amount of A_2 or B_1 generated or consumed by the cycling reaction. A composition for performing the assay comprises the above L-carnitine dehydrogenase, as well as the above components A_1 and B_1.

10 Claims, 2 Drawing Sheets